

TTM MATH JOURNAL ASSEMBLY

Within this document are all the necessary pages needed to help your students get started with their TTM Math Journals. Please print and 3-hole punch each of the following pages:

- TTM Math Journal Cover
- Using the TTM Math Journal (B)
- Track Your Progress (C – D[†])
- TTM Notes and Work (E – F[†])
- Math Words (G – H[†])
- 5-Step Problem Solving (I)
- Order of Operations (J)
- Checklist for Building and Solving Equations (K)

[†] Print extra copies of sheets D, F and H for your students to add to their journals throughout the school year.

Implementing the TTM Math Journal (A) is a page dedicated to you, the teacher, and is not a page that needs to be included for your students. If you have any questions, contact your Think Through Math Instructional Coach.



Think Through Math

MATH JOURNAL

IMPLEMENTING THE TTM MATH JOURNAL

Having students use the TTM Math Journal along with the computer is very important to the success of the TTM program. The TTM Math Journal provides an opportunity for students to...

SHOW THEIR WORK – This is a great way for students to show you exactly how they are working out these problems. We recommend that students show their work for appropriate problems in the Pre-Quizzes, Post-Quizzes, the Guided Learning, PSP and Independent Practice Activities. Not all problems require students to show work. Problems such as identifying a point on a number line will not be recorded in the TTM Math Journal. Teachers can use these journals as a way to make sure students are really working at their best on the TTM program.

DRAW OR DIAGRAM THE PROBLEM – As students are working through a problem, they may want to draw a diagram of the problem, create a table, work with a number line, or use some other tool. The journal provides a great way for students to record their work on the problem in a way that makes sense to them. It also can provide teachers with a wonderful insight into the ways their students are solving problems.

DEMONSTRATE THEIR THINKING PROCESS – Students can write about their thinking process or the challenges they faced working through a particular problem. We recommend using this strategy for only a small percentage of the problems they record. For instance, you might have students pick a problem they found difficult in each lesson and write about it.

SET GOALS – It is important that students set weekly goals. These help keep students focused and allow them an opportunity to track their own progress.

USING THE TTM MATH JOURNAL

Welcome to the TTM Math Journal. You can use it to record your ideas. Below is a list of some ways you can use your journal.

- Show your thinking to your teacher, other students, and those at home.
- Explore new and different ideas.
- Solve the same problem in different ways.
- Record ideas and concepts you want to review.
- Review your notes with your teacher to gain knowledge.
- Use as a portfolio of some of your work.
- Summarize your thoughts for each lesson.
- Keep track of your weekly and year-long goals.

STUDENT LOGIN INFORMATION

Keep this information safe and secure, and do not share this with your classmates.

Username: _____ Password: _____

TTM NOTES AND WORK

April 16, 2012

Unit: Number and Operations in Base Ten

Lesson: Addition and Subtraction Concepts

Activity: Practice

Record information such as the date, unit, lesson and activity. This will help when you review your notes.

Problem 1:

You have 84 green marbles, 19 blue marbles, 28 red marbles and 72 yellow marbles in your collection. How many marbles are in your collection?

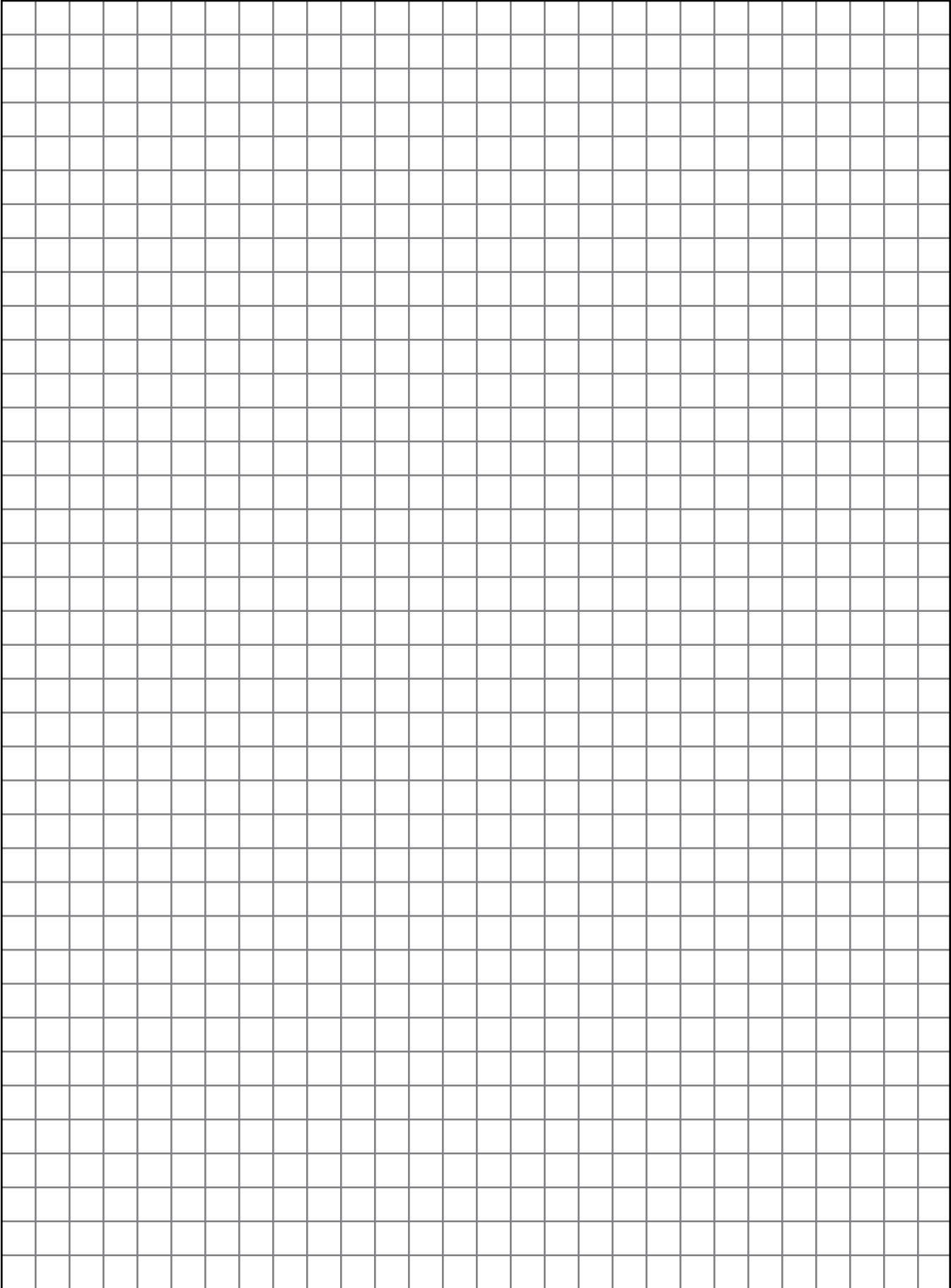
I know that 72 and 28 are 100 so I rewrote the problem as $84 + 19 + 100$.

I changed 19 to $16 + 3$. $84 + 16 + 3 + 100$.

I then wrote $100 + 3 + 100$. The answer was 203.

Knowing what to add first helped. Also changing 19 to 16 plus 3 made the problem easier to do.

TTM NOTES AND WORK



MATH WORDS

Use this section to record math words. Look at the sample for one way to list your math words.

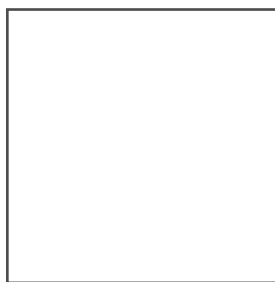
EXAMPLE:

MATH WORD: *Square*

Definition:

A square has 4 equal sides. It has 4 right angles.

Example:



Counter Example:

A square is a rectangle since it has four sides and four right angles. All rectangles are not squares. In a rectangle all four sides can be, but do not have to be equal.

Notes:

A square can also be a rhombus. A rhombus has 4 sides, opposite sides are parallel. All sides are the same length. The angles can be right angles but they don't have to be. Every square is a rhombus. Every rhombus is not a square.

MATH WORDS

MATH WORD:

Definition:

Example:

Counter Example:

Notes:

5-STEP PROBLEM SOLVING PROCESS

Understand

What is the problem asking? Take your time. Try rewriting the problem in your own words.

Organize

Organize the information by creating a table of values, units and descriptions. As you make the list think about how you can use the information. Draw a picture showing how the parts of the problem work together.

Build

Use the information to build an equation to solve the problem. Read what you have built and make sure you know what each number or variable stands for. Check that your equation makes sense.

Solve

Do the mathematical calculations carefully. Make sure that your answer makes sense. If it doesn't, do the work again.

Reflect

Think about what you did. Did you learn something new about how to work with problems? What do you still need to work on? How did you improve this time?

ORDER OF OPERATIONS

Operations are to be done in the following order, working from left to right.

1. Parentheses
2. Exponents
3. Multiplication and Division
4. Addition and Subtraction

EXAMPLE:

$$15 - 3 \times 2 + 8 \div 4$$

Work from left to right.

- ▶ Multiplication and Division are done first.
- ▶ Multiply 3 times 2.

$$15 - 6 + 8 \div 4$$

Divide 8 by 4.

$$15 - 6 + 2$$

Addition and Subtraction are done next.

- ▶ Subtract 6 from 15.

$$9 + 2$$

Add 9 plus 2

The expression equals 11.

EXAMPLE:

$$2^2 + 12 \cdot (4 - 6 \div 3)$$

First do what is in the parentheses.

- ▶ Multiplication and division are done before addition and subtraction.
- ▶ In the parenthesis divide 6 by 3.

$$2^2 + 12 \cdot (4 - 2)$$

Continue working in the parentheses.

- ▶ Subtract 2 from 4.

$$2^2 + 12 \cdot 2$$

Exponents are done after parentheses.

- ▶ Square 2.

$$4 + 12 \cdot 2$$

Multiplication is done before adding.

- ▶ $12 \cdot 2 = 24$

$$4 + 24$$

The last operation is adding.

- ▶ Add 4 and 24.

The expression equals 28.

Checklist for Building an Equation

Did I show the math situation?

Did I put the correct parts of the situation in the equation?

Does the equation connect the correct parts of the situation?

Did I use an equal sign?

Are the amounts on each side of the sign equal?

Did I use the unknown?

Did I put what I do not know in the equation? Did I use a letter to stand for the unknown?

Checklist for Solving an Equation

Did I combine like terms?

Have I combined all terms that contain an unknown? Have I added, subtracted, multiplied, and divided numbers where I can?

How can I isolate the unknown?

Can I use inverse operations to make sure the unknown is the only item on one side of the equation?

Did I simplify the equation completely?

Is the unknown by itself on one side of the equation? Have I performed all the operations I can on the other side of the equation?

Did I follow the order of operations?

Did I do the operations in their correct order? Did I work from left to right?